

MOS ESTIMATES REPORT: MOS PERIODS MARCH 2019, APRIL 2019 & MAY 2019

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1. Introduction

MOS (Market Operator Service) estimates provide a guide of the largest daily increase and decrease MOS quantities that market participants may reasonably expect for each STTM pipeline. The MOS estimate is based on historical data and therefore does not limit the quantity of MOS that may be experienced in the future.

The MOS estimates also determine the value of any overrun MOS. If the MOS estimate (increase or decrease) for an STTM pipeline exceeds the total quantity of MOS offered for that pipeline (increase or decrease respectively), then any overrun MOS is paid at the weighted average price within the relevant MOS stack. Otherwise, if the total quantity of MOS offered for an STTM pipeline exceeds the MOS estimate then overrun MOS is paid at the highest priced offer within the stack.

In accordance with rule 397 of the National Gas Rules (STTM Rules), AEMO publishes MOS increase and decrease estimates for each STTM pipeline prior to the commencement of each monthly MOS period. In determining the MOS estimates for each MOS period, AEMO must use the data specified in Section 5.2 (b) of the STTM Procedures.

2. The MOS period

MOS periods are defined in section 5.1 of the STTM Procedures. The MOS estimates contained in this document relate to MOS periods: March 2019, April 2019 and May 2019.

The MOS quantities for each STTM pipeline and each gas day are as determined in accordance with the published methodology for determining MOS estimates.¹

Sydney, Adelaide and Brisbane hubs

The Sydney and Adelaide STTM hubs commenced operations on 1 September 2010, while the Brisbane STTM hub commenced operations on 1 December 2011. Therefore the MOS estimate quantities are based on 'Method 3' for year 6 + of an STTM hub.² This means they are derived using the actual daily MOS allocation quantities for the periods March from 2014 to 2018; April from 2014 to 2018; and May from 2014 to 2018; for the following STTM pipelines:

- Moomba to Sydney Pipeline (MSP) and Eastern Gas Pipeline (EGP) – these pipelines supply gas to the Sydney STTM hub; and
- Moomba to Adelaide Pipeline (MAP) and SEA Gas pipeline (SEA) – these pipelines supply gas to the Adelaide STTM hub.
- Roma to Brisbane Pipeline (RBP) – the sole pipeline that supplies gas to the Brisbane STTM hub.

The input data collected from the previous years was combined to create a larger and more representative sample of MOS allocations.

¹ AEMO, *Methodology for determining MOS estimates*, Available at: http://www.aemo.com.au/Gas/Short-Term-Trading-Market-STTM/Market-operations/Market_Operator_Service.

² AEMO, *Methodology for determining MOS estimates*, pg 22

Explanation of MOS quantities and summary statistics

Positive MOS quantities indicate the requirements for increase MOS, whereas negative MOS quantities indicate the requirements for decrease MOS.³

STTM Rule 397(1)(a) requires AEMO to publish its estimate of the maximum quantity of MOS (by way of increase and decrease) likely to be required on any gas day in the relevant MOS period. This is provided in Table 1 below.

STTM Rule 397(1)(b) requires AEMO to publish its estimate of the range of daily quantities of MOS likely to be required, together with the number of gas days in the MOS period to which each of those estimated quantities applies. This is provided in the following tables and charts:

- Table 2 shows summary statistics of MOS quantity distributions, including the means, standard deviations, 5 and 95 percentile of the distributions, range and inter-quartile range,⁴ and the proportions of days in the MOS period with positive and negative MOS quantities.
- Table 3 shows the daily MOS quantities sorted in descending order and the number of day(s) associated with each estimated quantity.
- Figure 1 displays the curves of daily MOS quantities sorted in descending order from the highest to the lowest values.
- Figure 2 shows the Box plots which provide a graphical summary of the data and are useful tools for comparing the MOS increase and decrease quantities of the different STTM pipelines.

³ Note MOS increase and decrease offers must comply with the requirements in section 5.4(b)(ii) and section 5.4(c)(ii) of the STTM Procedures, and should be greater than zero for the purpose of creating the MOS stacks.

⁴ The inter-quartile range is the range of values between the first (25%) and third quartiles (75%) of the distributions.

MOS Period March 2019

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
MOS increase	16,713	17,570	11,641	1,170	8,126
MOS decrease	19,023	16,360	7,184	9,977	14,952

Figure 1 – Curves of daily MOS quantities

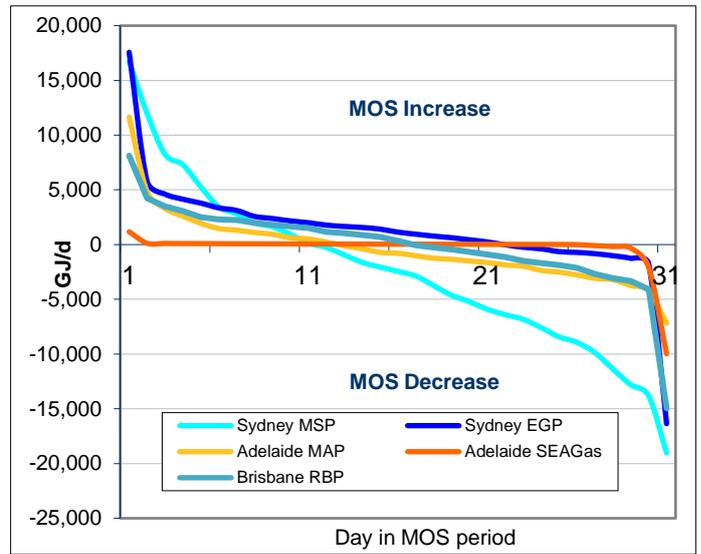


Table 2 – Summary statistics of daily MOS quantities

	Summary statistics GJ/d				
	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
Maximum	16,713	17,570	11,641	1,170	8,126
95%	10,121	5,199	4,067	113	3,856
75%	1,800	2,478	1,026	70	1,894
50%	-2,442	1,138	-789	38	334
25%	-7,208	-317	-2,168	16	-1,586
5%	-13,309	-1,502	-3,983	-1,197	-3,706
Minimum	-19,023	-16,360	-7,184	-9,977	-14,952
Mean	-2,397	1,253	-359	-330	-55
Std deviation	7,703	4,751	3,285	1,844	3,749
% days positive	35%	68%	39%	81%	52%
% days negative	65%	32%	61%	19%	48%

Figure 2 – Distribution of daily MOS quantities

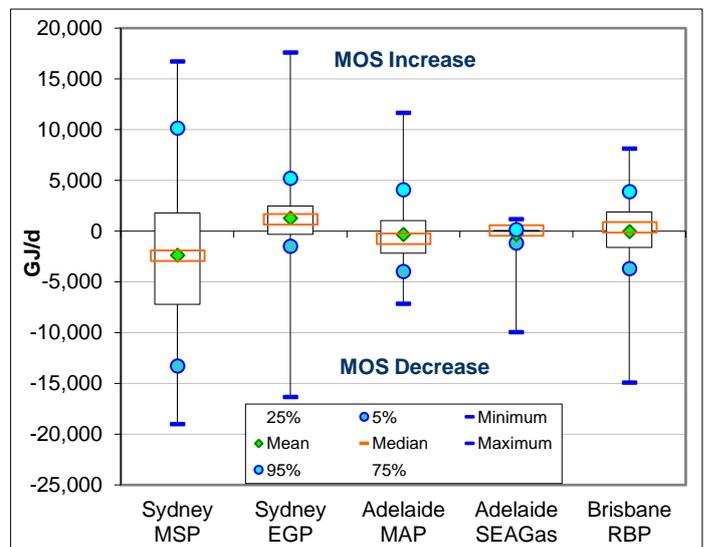


Table 3 – Daily MOS quantities (GJ/d) for March 2019

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	16,713	17,570	11,641	1,170	8,126
1	11,987	5,787	4,828	121	4,222
1	8,254	4,611	3,306	104	3,489
1	7,294	4,143	2,589	95	3,049
1	5,278	3,788	1,948	91	2,514
1	3,443	3,354	1,467	82	2,309
1	2,810	3,119	1,317	75	2,229
1	1,979	2,571	1,104	72	1,978
1	1,621	2,385	947	68	1,810
1	938	2,162	620	64	1,656
1	125	2,000	519	57	1,512
1	-264	1,778	225	53	1,161
1	-939	1,657	-93	48	1,037
1	-1,621	1,562	-379	46	884
1	-2,048	1,417	-710	40	698
1	-2,442	1,138	-789	38	334
1	-2,871	950	-1,020	34	-59
1	-3,750	774	-1,246	32	-272
1	-4,629	627	-1,342	29	-435
1	-5,219	438	-1,501	28	-663
1	-5,918	244	-1,648	23	-903
1	-6,406	-25	-1,864	20	-1,127
1	-6,825	-245	-1,976	18	-1,477
1	-7,591	-389	-2,360	13	-1,695
1	-8,435	-644	-2,509	11	-1,867
1	-8,932	-716	-2,774	-6	-2,127
1	-9,872	-832	-3,084	-95	-2,679
1	-11,358	-1,016	-3,208	-176	-3,057
1	-12,801	-1,256	-3,739	-329	-3,321
1	-13,816	-1,748	-4,227	-2,065	-4,090
1	-19,023	-16,360	-7,184	-9,977	-14,952

MOS Period April 2019

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
MOS increase	20,462	9,247	7,758	454	8,778
MOS decrease	23,284	8,174	11,025	9,166	8,821

Figure 1 – Curves of daily MOS quantities

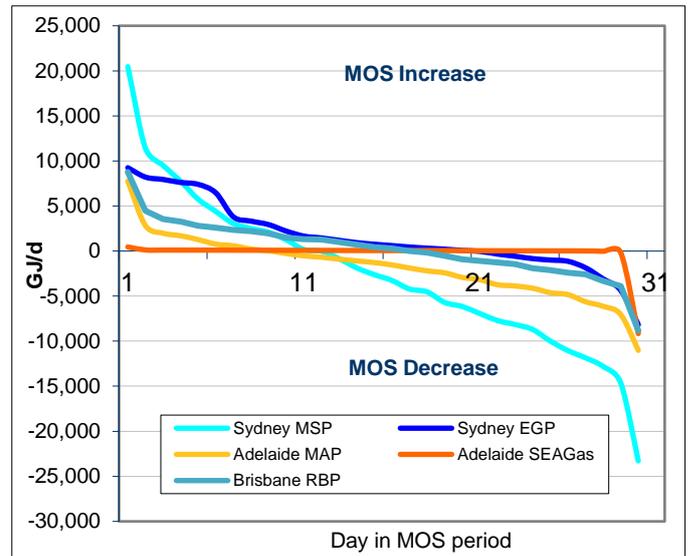


Table 2 – Summary statistics of daily MOS quantities

	Summary statistics GJ/d				
	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
Maximum	20,462	9,247	7,758	454	8,778
95%	10,558	8,089	2,448	113	4,058
75%	2,397	3,223	171	89	2,132
50%	-2,943	680	-1,410	55	369
25%	-8,050	-518	-3,845	27	-1,398
5%	-13,801	-3,789	-6,634	-94	-3,623
Minimum	-23,284	-8,174	-11,025	-9,166	-8,821
Mean	-2,534	1,512	-1,761	-242	268
Std deviation	8,796	3,946	3,502	1,688	3,133
% days positive	37%	67%	30%	90%	57%
% days negative	63%	33%	70%	10%	43%

Figure 2 – Distribution of daily MOS quantities

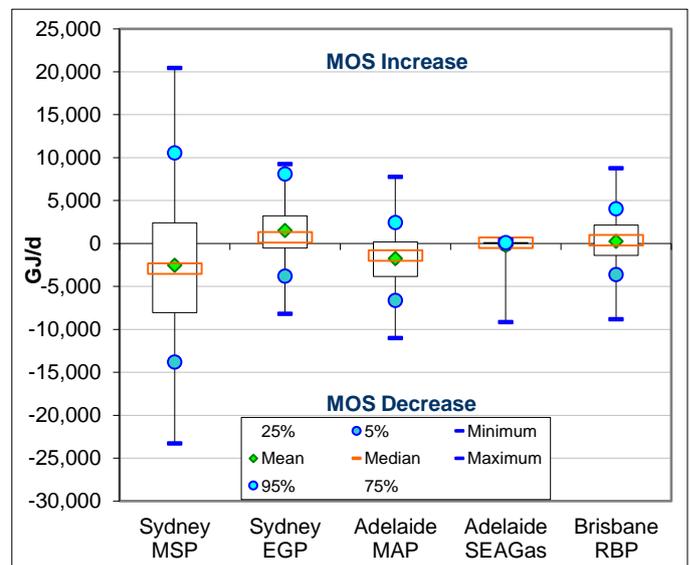


Table 3 – Daily MOS quantities (GJ/d) for April 2019

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	20,462	9,247	7,758	454	8,778
1	11,416	8,206	2,831	119	4,476
1	9,509	7,945	1,980	106	3,547
1	7,748	7,612	1,690	103	3,260
1	5,749	7,398	1,267	102	2,814
1	4,394	6,462	765	97	2,601
1	3,052	3,794	581	94	2,342
1	2,500	3,319	216	90	2,195
1	2,086	2,934	34	86	1,941
1	1,246	2,210	-277	82	1,506
1	172	1,657	-533	74	1,315
1	-13	1,451	-687	70	1,263
1	-848	1,189	-897	63	993
1	-1,868	932	-1,098	60	713
1	-2,623	754	-1,279	56	433
1	-3,262	606	-1,541	54	304
1	-4,215	447	-1,886	53	11
1	-4,530	319	-2,198	51	-184
1	-5,705	207	-2,420	49	-542
1	-6,159	72	-2,925	45	-915
1	-6,939	-41	-3,183	35	-1,108
1	-7,718	-337	-3,742	31	-1,274
1	-8,160	-579	-3,879	26	-1,439
1	-8,710	-843	-4,131	22	-1,895
1	-9,990	-999	-4,622	20	-2,111
1	-11,050	-1,138	-4,836	18	-2,399
1	-11,853	-1,853	-5,625	9	-2,585
1	-12,801	-3,089	-6,135	-28	-3,313
1	-14,620	-4,361	-7,043	-148	-3,877
1	-23,284	-8,174	-11,025	-9,166	-8,821

MOS Period May 2019

Table 1 – Maximum MOS quantities (GJ)

	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
MOS increase	16,087	16,395	11,082	346	6,199
MOS decrease	23,970	9,676	8,957	11,657	10,703

Figure 1 – Curves of daily MOS quantities

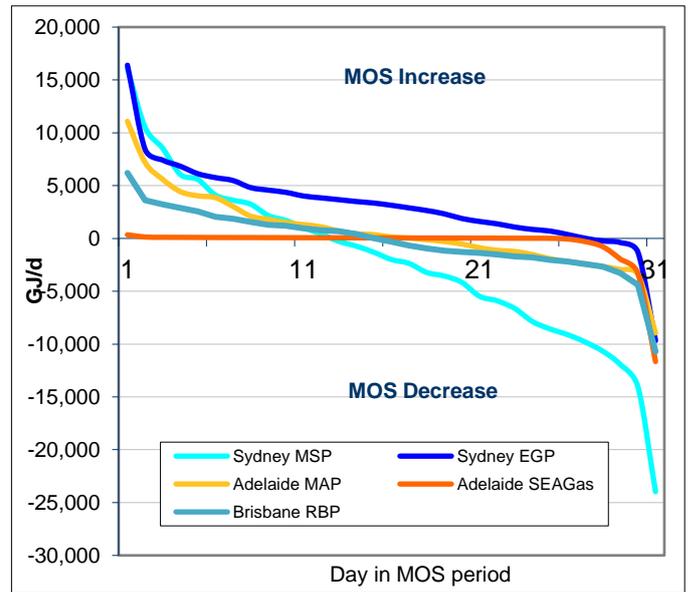


Table 2 – Summary statistics of daily MOS quantities

	Summary statistics GJ/d				
	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
Maximum	16,087	16,395	11,082	346	6,199
95%	9,530	7,925	6,397	120	3,425
75%	2,705	4,690	1,956	79	1,421
50%	-2,005	3,133	132	46	-304
25%	-7,248	962	-1,381	18	-1,749
5%	-12,988	-848	-3,179	-2,637	-3,839
Minimum	-23,970	-9,676	-8,957	-11,657	-10,703
Mean	-2,212	3,089	597	-526	-295
Std deviation	7,982	4,138	3,636	2,184	3,005
% days positive	39%	87%	55%	81%	48%
% days negative	61%	13%	45%	19%	52%

Figure 2 – Distribution of daily MOS quantities

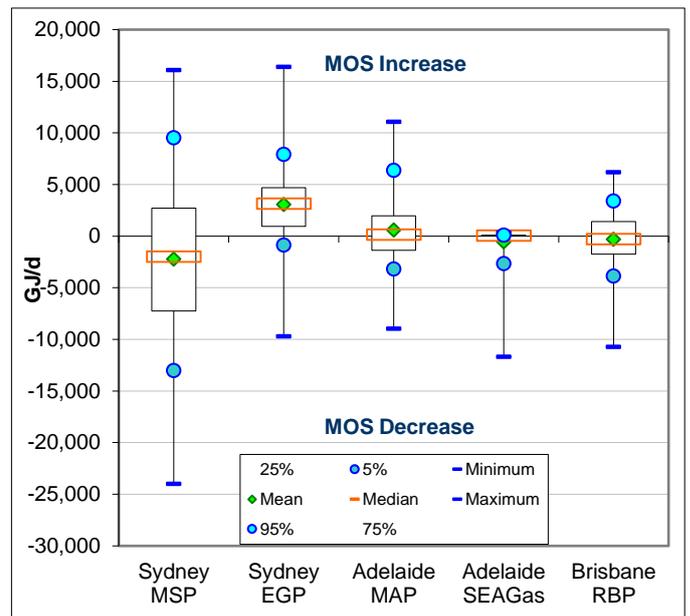


Table 3 – Daily MOS quantities (GJ/d) for May 2019

No of days	Sydney MSP	Sydney EGP	Adelaide MAP	Adelaide SEAGas	Brisbane RBP
1	16,087	16,395	11,082	346	6,199
1	10,519	8,439	7,198	134	3,623
1	8,540	7,411	5,595	106	3,226
1	6,063	6,835	4,435	100	2,889
1	5,576	6,121	4,030	92	2,567
1	4,105	5,754	3,863	86	2,053
1	3,616	5,479	3,022	82	1,862
1	3,240	4,810	2,111	81	1,567
1	2,169	4,571	1,801	76	1,275
1	1,710	4,360	1,502	71	1,196
1	1,010	4,014	1,313	67	967
1	422	3,837	1,096	65	783
1	-279	3,665	701	59	679
1	-732	3,491	439	53	399
1	-1,312	3,346	359	51	26
1	-2,005	3,133	132	46	-304
1	-2,366	2,888	33	42	-674
1	-3,226	2,640	-126	40	-950
1	-3,558	2,324	-296	39	-1,149
1	-4,159	1,884	-535	34	-1,293
1	-5,477	1,604	-876	31	-1,376
1	-5,905	1,380	-1,125	23	-1,511
1	-6,633	1,072	-1,234	20	-1,699
1	-7,862	852	-1,527	15	-1,798
1	-8,569	697	-1,924	9	-2,038
1	-9,108	369	-2,184	-56	-2,177
1	-9,804	16	-2,398	-303	-2,432
1	-10,674	-245	-2,657	-780	-2,684
1	-11,936	-395	-2,944	-1,956	-3,272
1	-14,040	-1,302	-3,414	-3,317	-4,406
1	-23,970	-9,676	-8,957	-11,657	-10,703